Open Network Policies for Broadband in Japan (1999-2009)

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Open Network Policies (1999-)

(1) DSL phase

- Unbundling of Copper Local Loops (Dec. 1999; Sep. 2000)
- Colocation Rules (Sep. 2000)
- Unbundling of Interoffice Optical Fiber (Dec. 2000; Apr. 2001)

(2) Launch of FTTH

- Unbundling of Subscribed Optical Fiber (Dec. 2000; Apr. 2001)
- Unbundling of Interoffice Optical Fiber (Dec. 2000; Apr. 2001)

(3) Introduction of B-PON

- Admission of Rates for B-PON Subscribed Optical Fiber (Dec. 2004)
- Discussion of further unbundling (2006-)

(1) DSL phase

•Ministry of Communications (now MIC) introduced the 1st so-called UNBUNDLING policy for Copper Local Loops in 1999 and the 1st ADSL service was realized in Dec. 1999.

•UNBUNDLING is to set the interconnection charges per function. (You don't have to pay for the functions you don't need.)

•The unbundling of Copper Local Loops was realized by administral guidance which was issued in August 1999.

•HOWEVER, subscribers of DSL services did NOT increase dramatically soon in 2000. What the Ministry found at that time were many disputes between new entrances to DSL market and NTT companies concerning conditions and terms for interconnections & colocations.

Subscribers of DSL services using unbundled local loop in 2000

February	March	April	May	June	July	August	September	October
35	74	147	438	831	1124	1558	1931	2491

(1) DSL phase (continued)

•In September 2000, Ministry of Communications codified copper unbundling rules including rules for rate settings. The Ministry also introduced the COLOCATION rules.

•The Ministry issued an administral guidance to unbundle interoffice optical fiber in December 2000 (codified in April 2001).

Colocation Rules (Sept. 2000~)

To connect facilities with the unbundling of lines, COLOCATION rules were vital for competitive carriers to provide their services.

1)Disclose information on open space

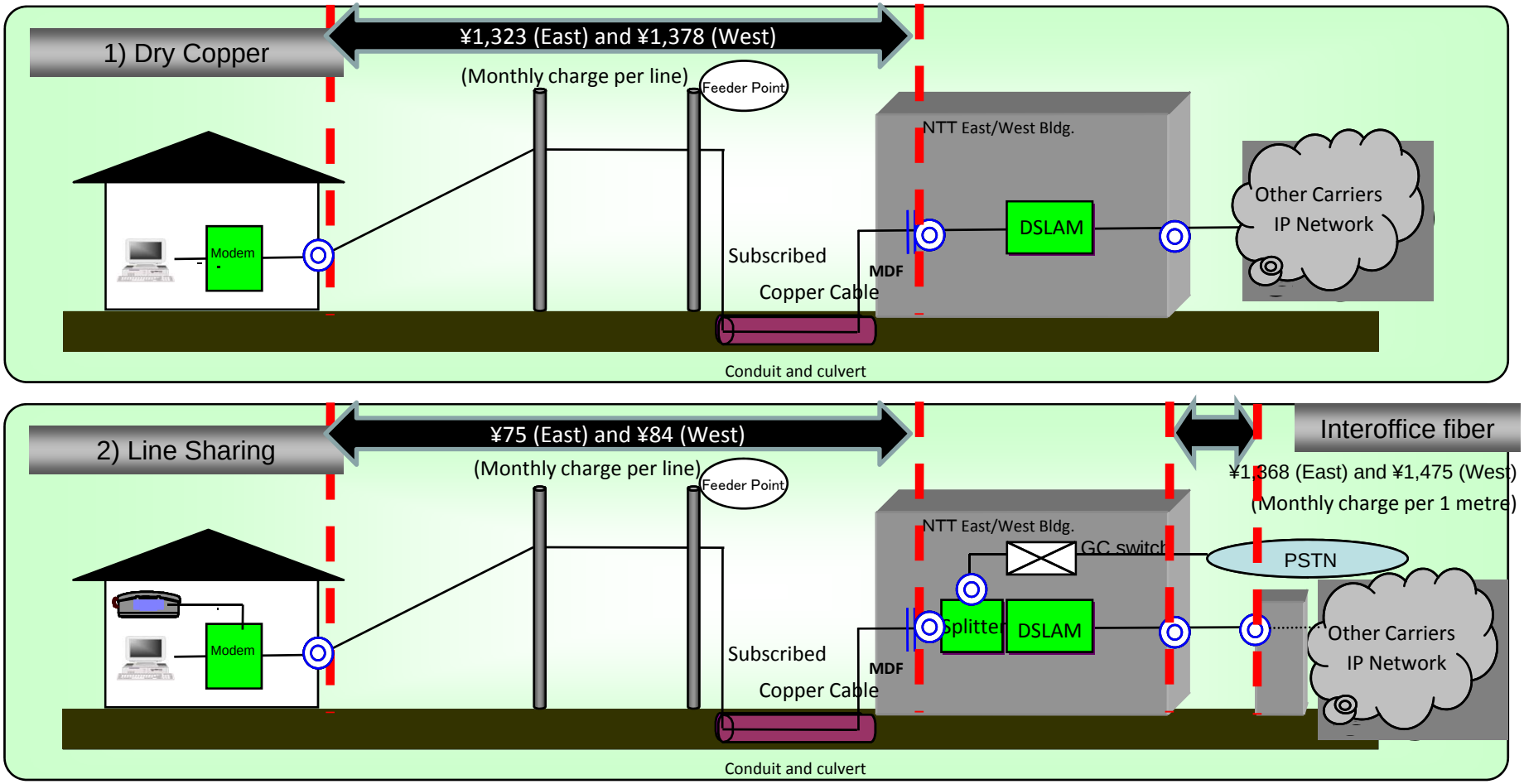
2)Set application procedures for construction and maintenance by interconnection carriers

3)Set up standard period (for survey application, reply, application of installation and starting construction)

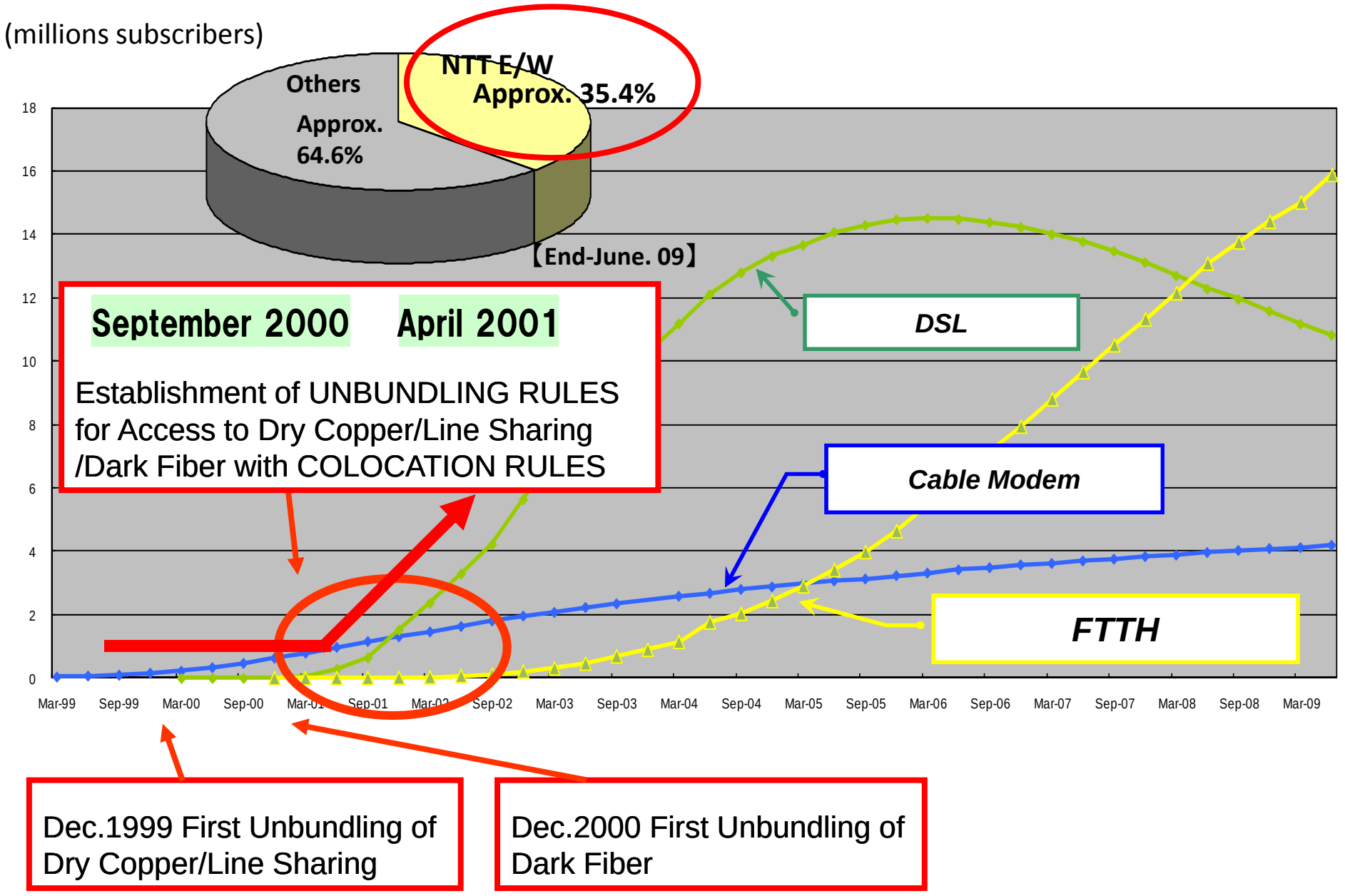
•With the competition among the new entrants using unbundled lines and NTT companies, prices were lowered, speeds were raised and subscribers were rapidly increased.

Unbundling of Copper Local Loop

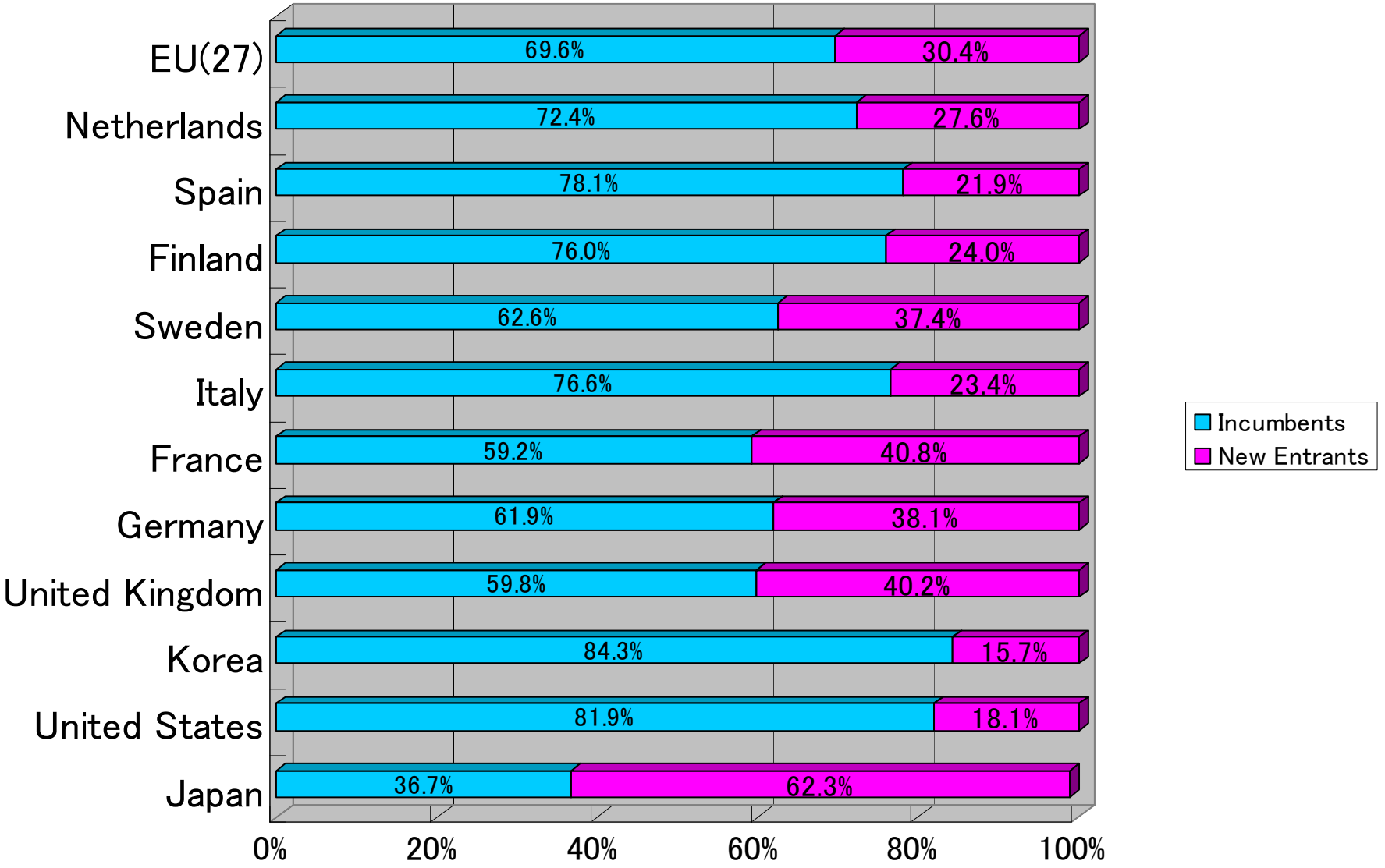
- There have been two ways of unbundling of Copper Local Loop both of which were introduced in 1999.
  1) Dry Copper (used solely for Competitive carriers uses)
  2) Line Sharing (used sharing with NTT who uses the line for providing PSTN service.)



Launch of DSL

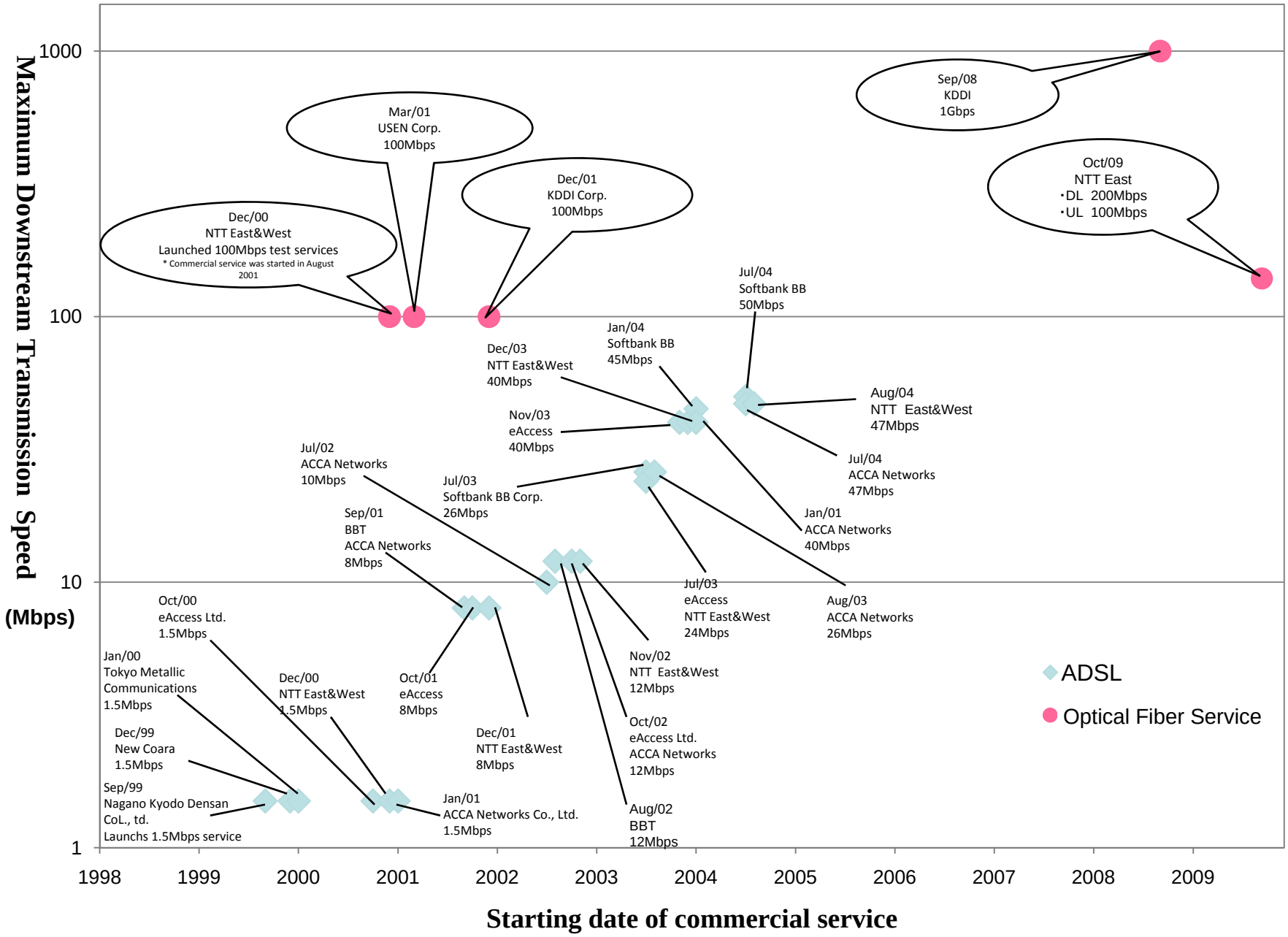


Entrants to DSL Market in Global Comparison



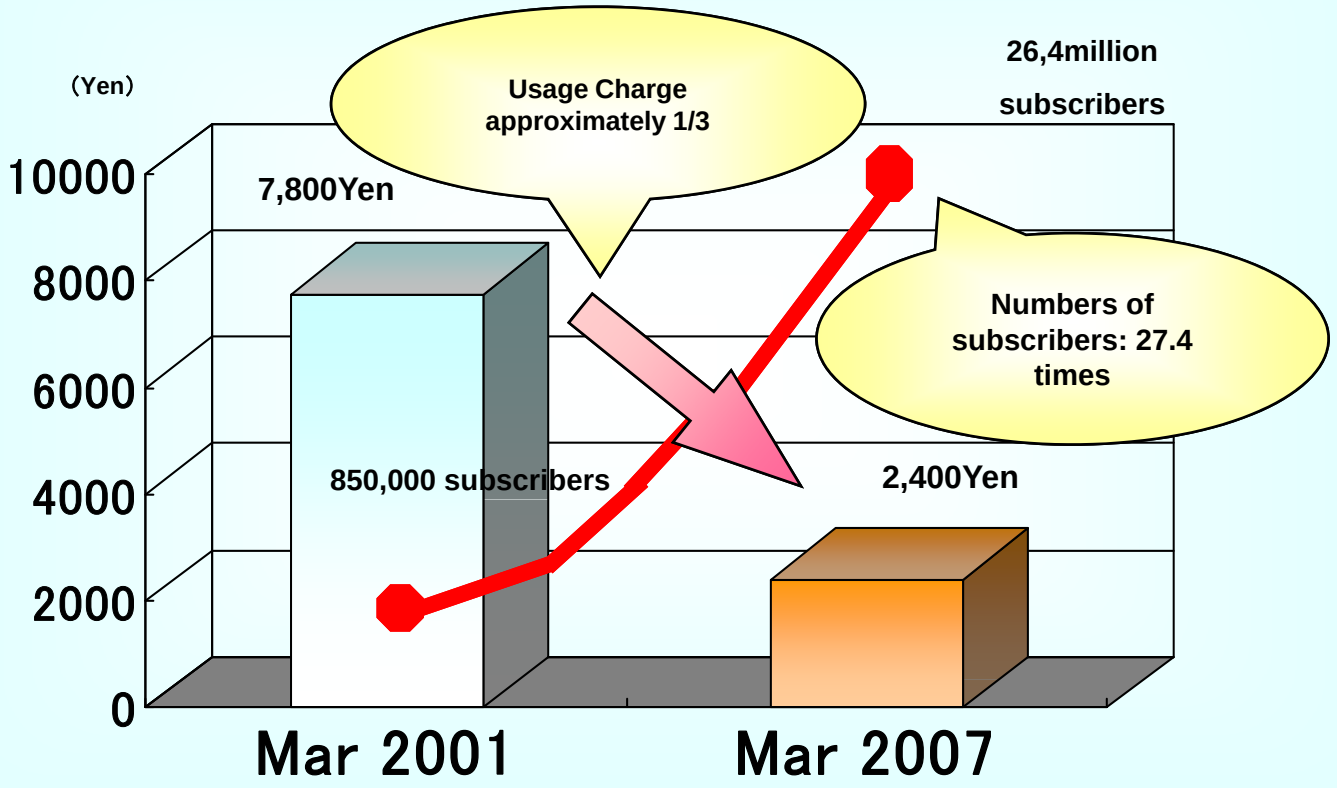
【Source】
European Countries：Jun.2007(European Committee)
Japan：Mar.2008(MIC)
USA：Jun.2006 (FCC)
Korea：Jan.2006 (MIC)

Transmission Speed by Service Providers (1999-2009)



DSL Usage Charges were lowered (2001-07)

◆High-speed Internet usage charge and subscribers



Source : IT Strategy Headquarters

(2) Launch of FTTH

•To solve a dispute between carriers, the Ministry of Communications issued an order requiring NTT East to unbundle Optical Fiber for Nippon Koushinmou in Nov. 2000.

•The administral guidance in December 2000 asked NTT East/West to unbundle the Optical Fiber subscriber lines to competitive carriers. It was codified into Ministrial Ordinances with rules on rates and terms in April 2001.

•NTT East/West launched long-awaited their first FTTH service “Optical-IP Communications Network Service (provisional)” in December 2000 as a trial service and then launched their first commercial FTTH service “B-Flet’s” with 100 Mbps for 9000 yen/month in August 2001.

•Though we saw many entrants to FTTH services market at that time (59 in September 2004), with the DSL’s massive competitiveness, FTTH services were popular only for business users and apartment building residents.

(3) Introduction of B-PON

•In 2002-2003, NTT East/West launched B-PON (Broadband Passive Optical Network) service (NTT East in April 2003 and West in September 2002). (With B-PON technology, one fiber subscriber line is shared with 8 end-users.)

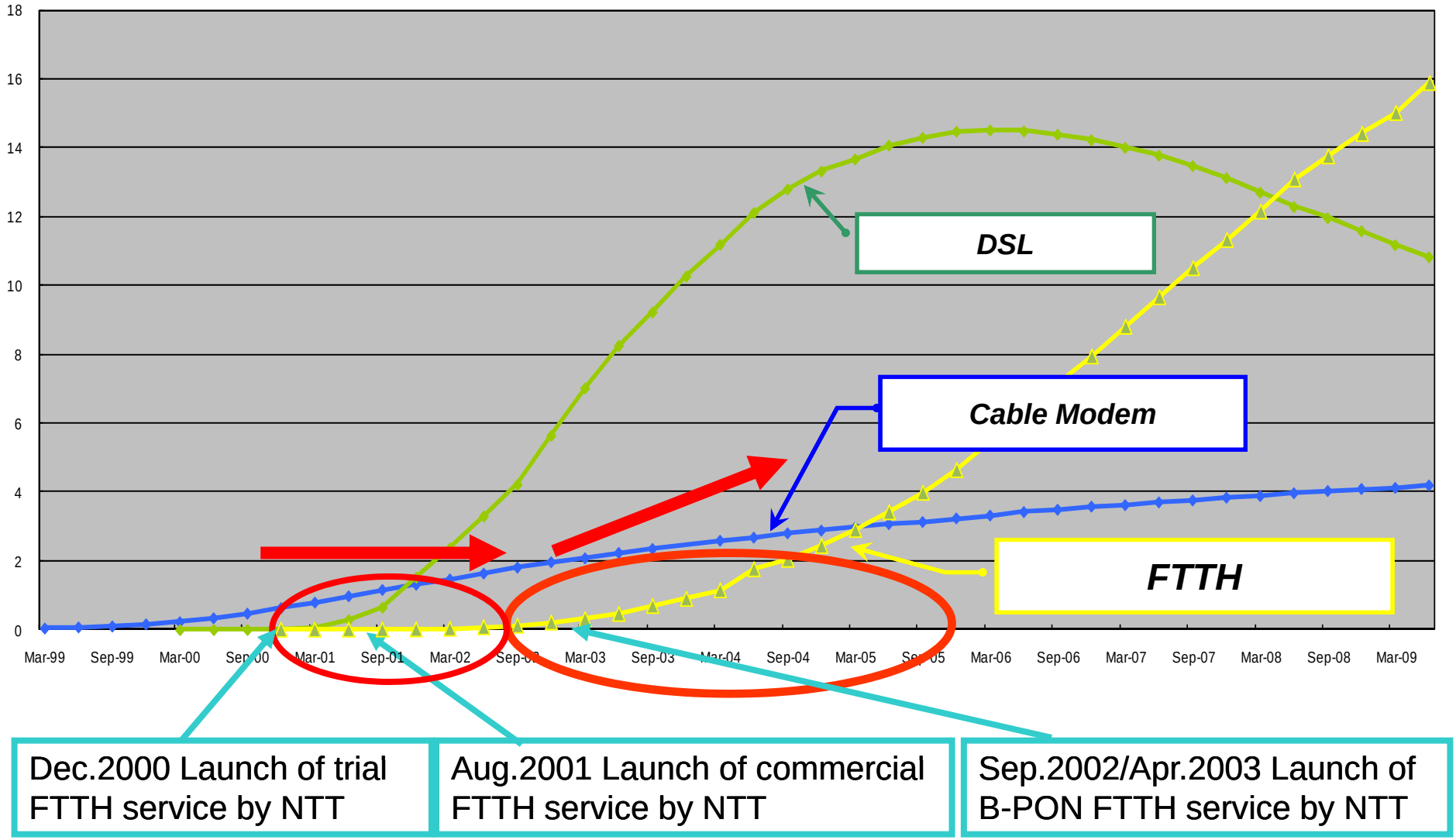
•The services (renewed “New Family” service) with 100Mbps for ¥4500(-Jan. 2005)-4100(Feb.2005-) (NTT East) or ¥4300 (NTT West) were very competitive and became popular among one-unit home residents.

•Ministry of Internal affairs and Communications (MIC) admitted NTT East/West to set unbundled rates for B-PON subscribed fiber lines in December 2004. The rates were set for 1 optical fiber line with 8 branches.

•As the above mentioned rates were criticized too expensive for competitive carriers, MIC considered about setting the rates for each of end-users (1/8 line) from 2006 to 2008. Since 2008 MIC has been watching technical feasibility studies on unbundling of the B-PON.

Launch of FTTH/B-PON

(millions subscribers)



Dec.2000 Launch of trial FTTH service by NTT

Aug.2001 Launch of commercial FTTH service by NTT

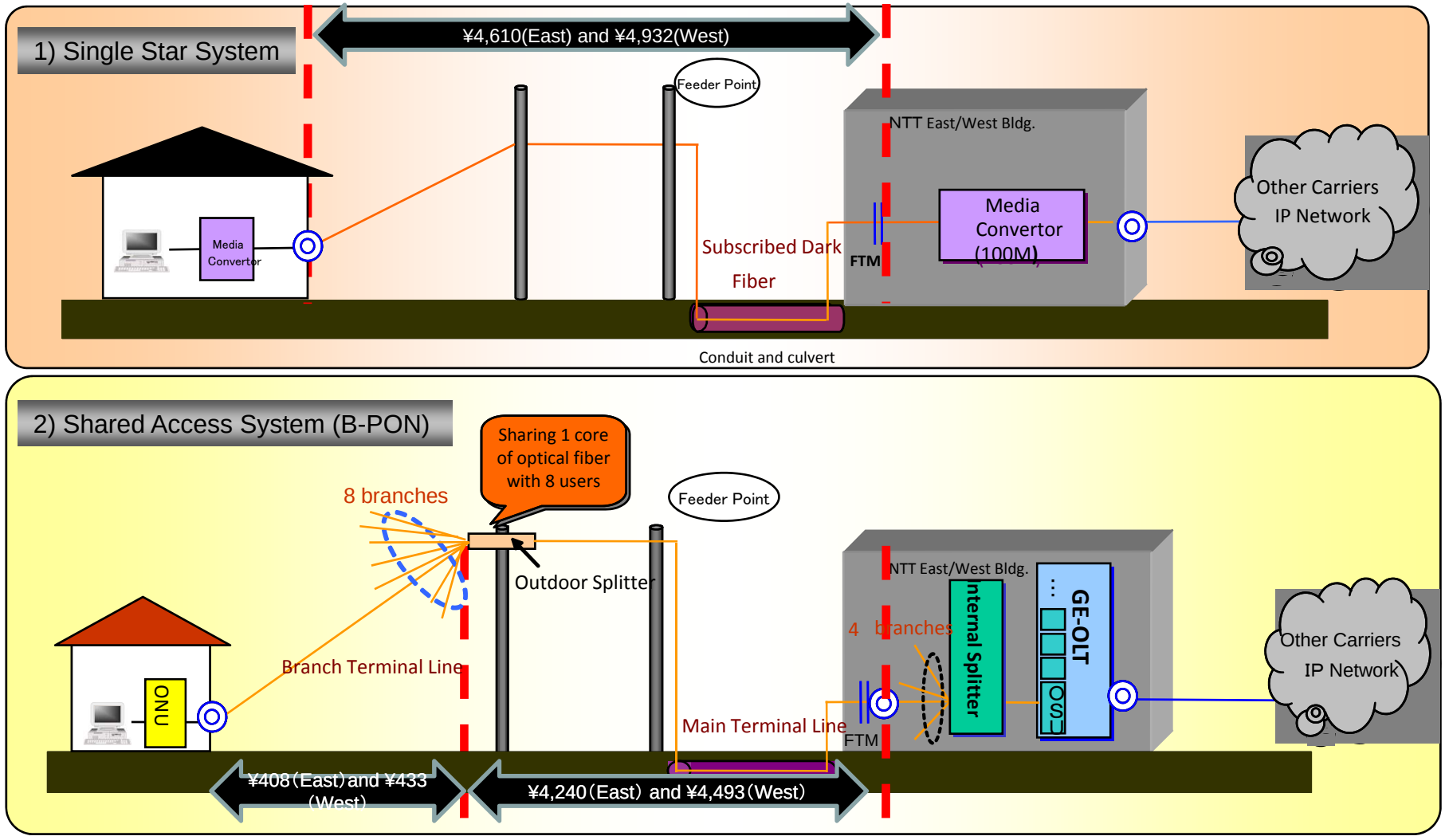
Sep.2002/Apr.2003 Launch of B-PON FTTH service by NTT

Unbundling of Subscribed Optical Fiber

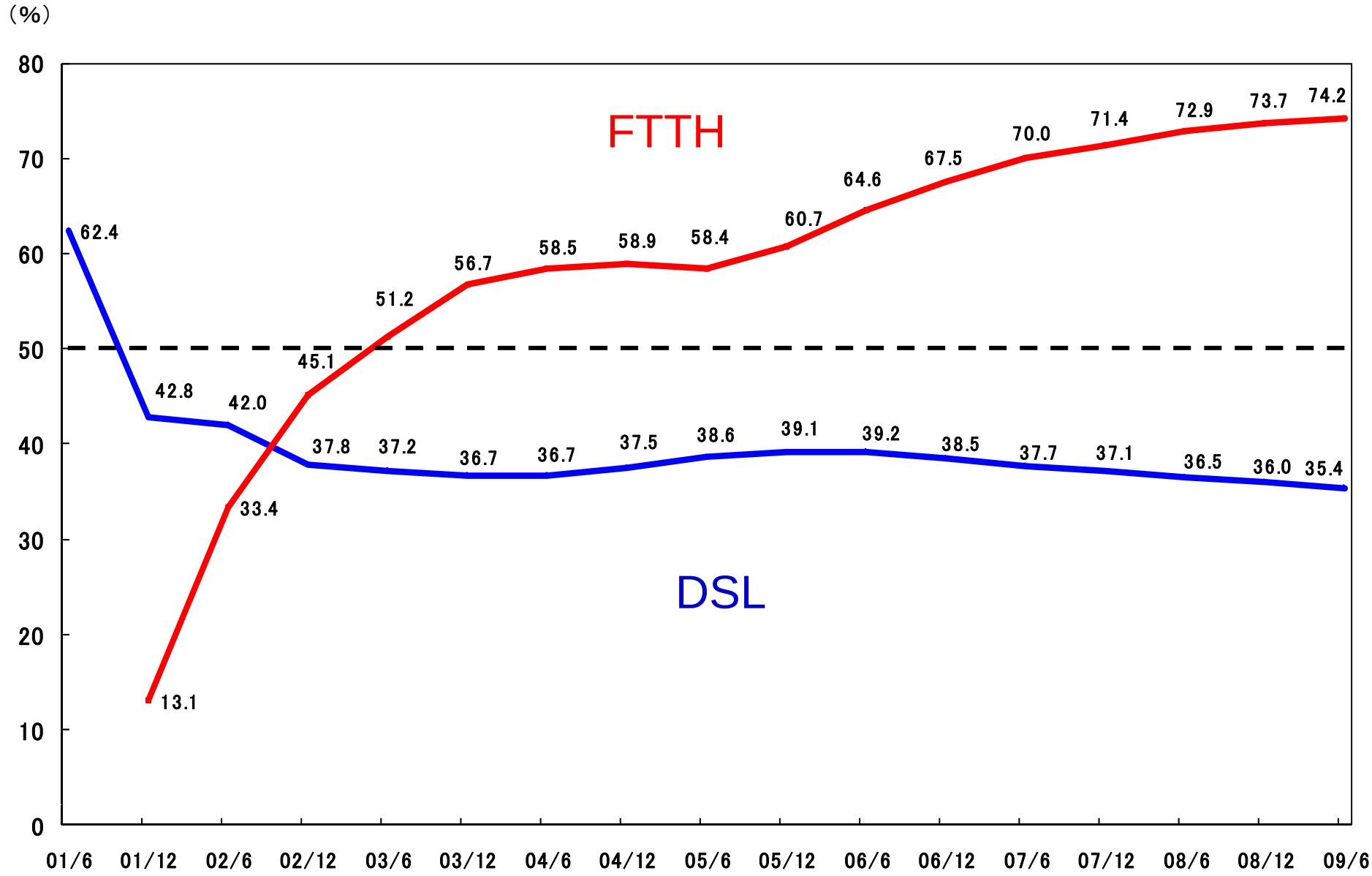
■ Unbundling of Subscribed Optical Fiber was done first for Single Star System (December 2000). After the introduction of E-PON system, the unbundling of Shared Access System was introduced in 2004.

1) Single Star System(Connecting to subscribed dark fiber) <This is mainly for condominium buildings and companies>

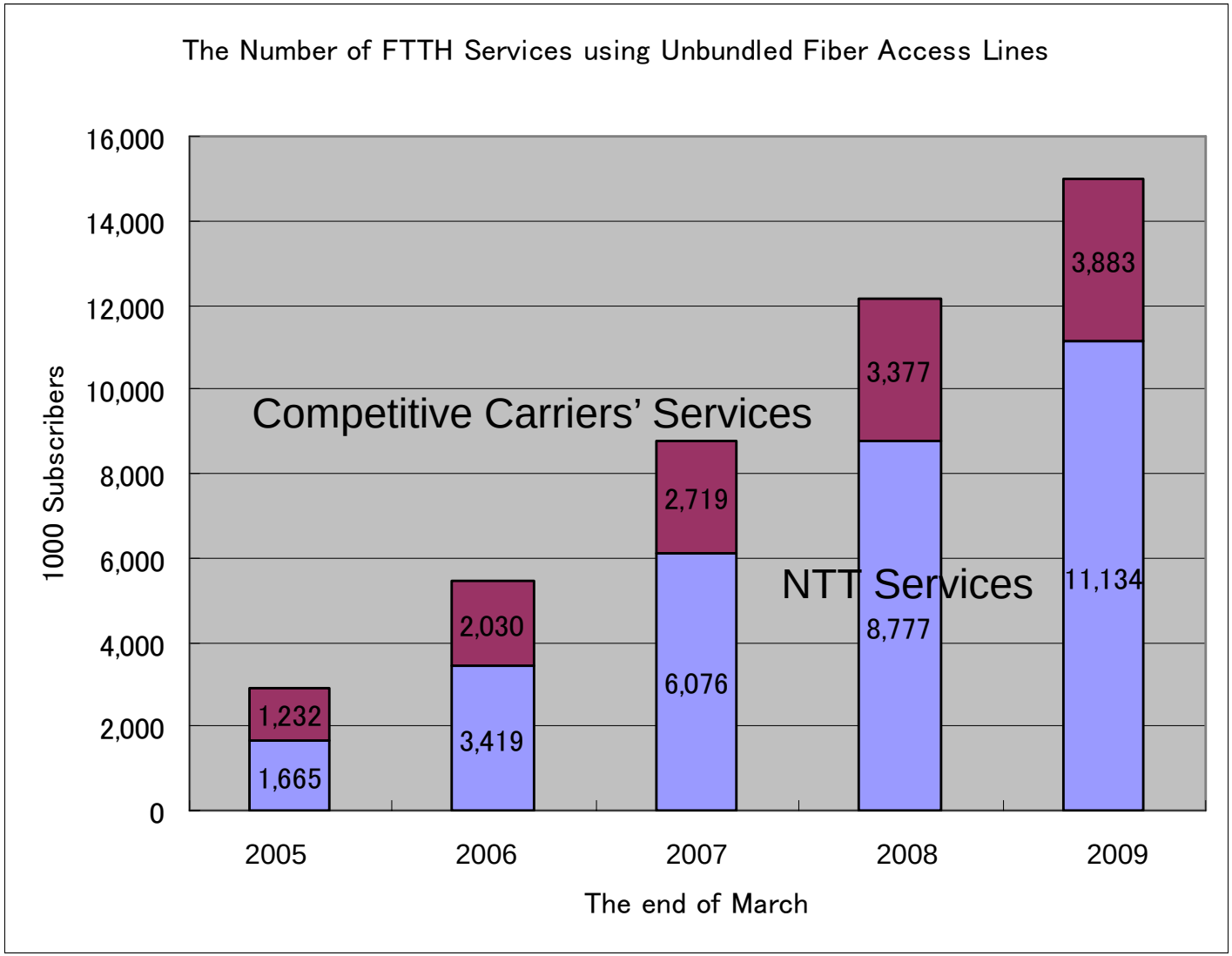
2) Shared Access System(Dividing 8 branches at outdoor splitter and connecting them to branch terminal line) <This is mainly for one-unit home>



Share of NTT East and West in DSL and FTTH Markets



Use of Unbundled Optical Fiber Access Lines



Why UNBUNDLING?

1. **The TRANSMISSION LINE FACILITIES (SUBSCRIBER LINES and other facilities) are essential for providing Telecommunications services.**
   It is almost impossible for competitive carriers to reach houses or offices without ESSENTIAL FACILITIES.

2. **Transmission speed depends on transmitting devices connected to two ends of each transmission line.**
   When you have new transmitting devices for broadband services, you need to get ESSENTIAL TRANSMISSION LINES to be connected to the devices for providing broadband services.

3. **It took one century to establish 60 million SUBSCRIBER LINES.**
   It is almost impossible for competitive carriers to reestablish nation-wide subscriber lines and other ESSENTIAL FACILITIES to compete against NTT.

>>> Rules for Unbundling of ESSENTIAL TRANSMISSION LINES are vital to realize competitive environment for BROADBAND services.

UNBUNDLING Effective?

>>> Unbundling rules are effective when they are adequate. We should seek out adequate rules for B-PON services.

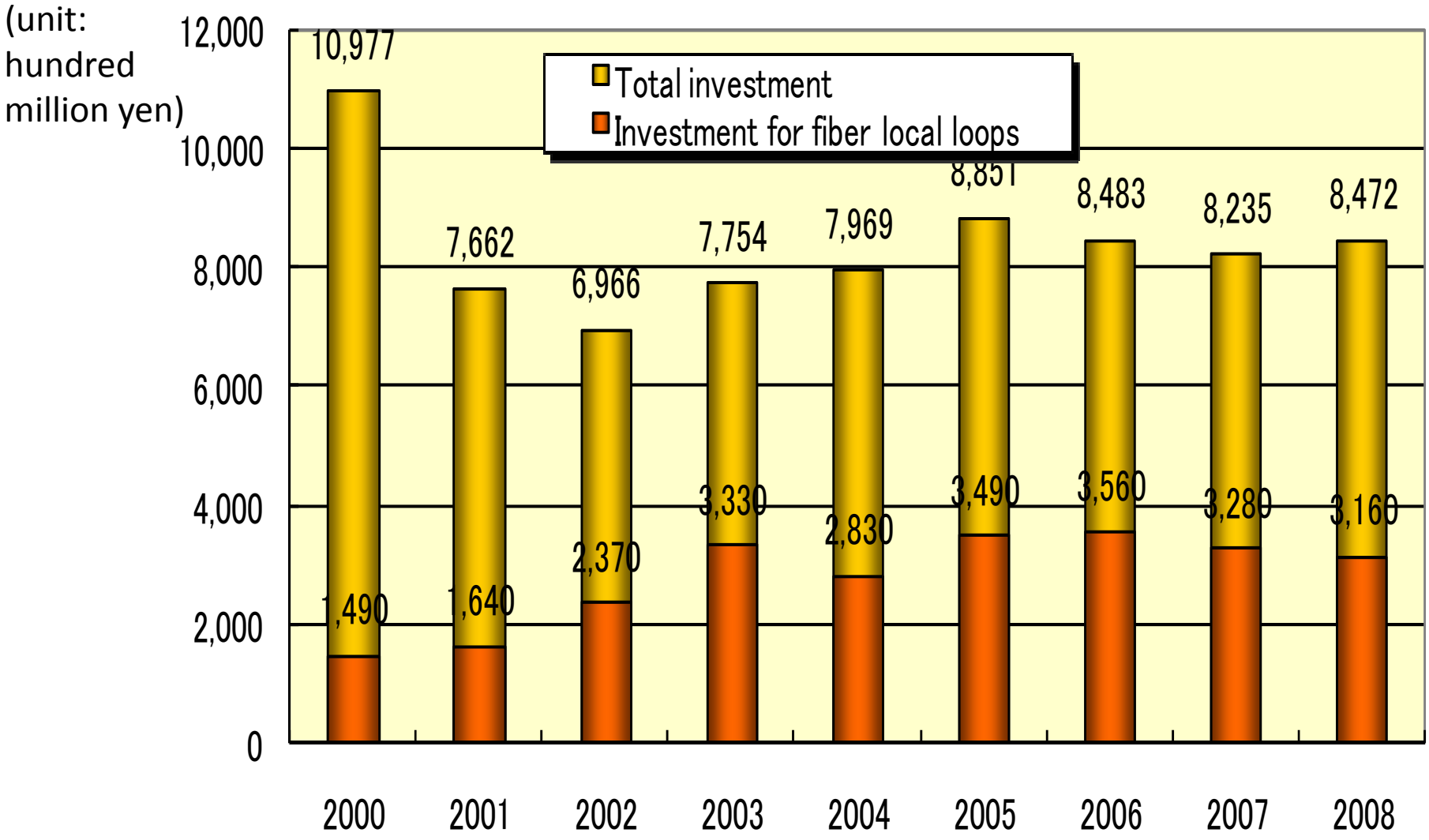
1. **The unbundling rules would work when set with adequate rate setting and colocation rules.**
   DSL market has been competitive since the arrangement of such rules in 2000.

2. **The rates should be set adequate to keep level playing field among carriers while not harming carriers' incentive to investment on infrastructure.**
   The rates for unbundled copper cable and dark fiber have been set so as to NTT can expect collecting adequate cost. We saw many entrants to the broadband market with unbundled lines while we have not noticed any disincentive for investment so far.

3. **We face a new challenge of SHARED ACCESS System of FTTH.**
   We see NTT East/West are gaining shares in broadband market by their competitive FTTH services with B-PON technology. We are to consider appropriate ways to promote competition while watching technical feasibility studies on unbundling of the B-PON.

Unbundling has not harmed Incentive for Investment

【 Trend of total investment and investment for fiber local loop】



Thank you!